

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

CENTRAL ILLINOIS LIGHT COMPANY,)	
d/b/a Ameren CILCO)	ICC Docket No. 06-0070
)	
Proposed General Increase For Delivery Services)	
)	
)	
CENTRAL ILLINOIS PUBLIC SERVICES)	
COMPANY,)	
d/b/a AmerenCIPS)	ICC Docket No. 06-0071
)	
Proposed General Increase For Delivery Services)	
)	
ILLINOIS POWER COMPANY,)	
d/b/a AmerenIP)	ICC Docket No. 06-0072
)	
Proposed General Increase For Delivery Services)	(consolidated)

**REBUTTAL TESTIMONY OF EDWARD C. BODMER
ON BEHALF OF THE CITIZENS UTILITY BOARD**

CORRECTED CUB EXHIBIT 3.0

June 27, 2006

(Revised July 18, 2006)

**REBUTTAL TESTIMONY OF
EDWARD C. BODMER**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
I. QUALIFICATIONS AND SUMMARY OF RECOMMENDATIONS.....	1
II. GENERAL COMMENTS ON REBUTTAL TO STAFF.....	4
III. REVISED CAPITAL STRUCTURE.....	7
IV. COST OF EQUITY ESTIMATION FROM DCF MODEL.....	14
V. COST OF EQUITY CAPITAL ESTIMATION FROM THE CAPM.....	32
VI. RESPONSE TO MS. MCSHANE.....	41
VII. RESPONSE TO MR. NICKLOY.....	43
VIII. COST OF EQUITY UPDATE.....	50

1 **DOCKET NO. 06-0070(cons.)**
2 **BEFORE THE ILLINOIS COMMERCE COMMISSION**
3 **REBUTTAL TESTIMONY OF EDWARD C. BODMER**
4 **ON BEHALF OF THE CITIZENS UTILITY BOARD**
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6

7 **I. QUALIFICATIONS AND SUMMARY OF RECOMMENDATIONS**
8

9 **Q. What is your name and on whose behalf are you testifying?**

10 A. My name is Edward C. Bodmer. I am testifying on behalf of the Citizens Utility
11 Board (“CUB”).
12

13 **Q. Have you submitted testimony in this proceeding?**

14 A. Yes. I submitted CUB Exhibit 1.0 on April 26, 2006, which included my
15 qualifications.
16

17 **Q. What is the purpose of your rebuttal testimony?**

18 A. The purpose of my rebuttal testimony is to comment on the testimony of other
19 parties with respect to Ameren’s cost of capital and its capital structure.
20 Specifically, I address comments made in the direct testimony of IIEC witness
21 Michael Gorman, Cities witness Richard Cuthbert and Staff witnesses Janis
22 Freetly and Alan Pregozen. I also respond to the rebuttal testimony of Ameren
23 witnesses Kathleen McShane and Lee Nickloy.
24

25 **Q. Briefly review the conclusions developed in your direct testimony.**

26 A. The recommendations in my direct testimony related to capital structure and cost
27 of equity capital. I concluded the Commission should apply common equity
28 ratios of 32%, 27% and 38% for CIPS, CILCO and IP in its calculation of the rate
29 of return for these companies. I derived the ratios through using the same general
30 method employed by Staff in the ComEd delivery case, where it computed the
31 equity ratio through analyzing credit rating implications of cash flow coverage
32 ratios.

33 In my direct testimony I concluded that the Commission should set the authorized
34 return on equity at a level of 8% for CIPS, CILCO and IP. This recommendation
35 was based principally on DCF and CAPM cost of equity analysis. I also
36 demonstrated that the 8% cost of equity is consistent with a market to book ratio
37 analysis as well as information published by investment bankers in the recent
38 Exelon/PSEG merger.

39
40 **Q. How have you organized your rebuttal testimony?**

41 A. I begin with a general discussion of why much of my rebuttal testimony focuses
42 on addressing Staff's testimony. Then, I address issues associated with the capital
43 structure proposed by Staff witness Pregozen where I contrast his testimony with
44 the Staff presentation in the on-going ComEd case. Next, I consider cost of
45 equity issues that arise in Staff's analysis. I first comment on the DCF model
46 developed by Staff and then I review Staff's CAPM analysis. After discussing
47 Staff's testimony, I comment on statements made by Ameren witnesses in their
48 rebuttal testimony. Finally, I discuss how recent events in capital markets have
49 affected Ameren's cost of capital.

50
51 **Q. Has your review of the testimony submitted by other parties and your
52 analysis of recent market activity caused you to change your
53 recommendation?**

54 A. With respect to capital structure issues, yes. Upon review of the testimony of
55 Janis Freetly and Alan Pregozen, I have revised the mechanics of my capital
56 structure recommendation. I have used the data and formulas presented in their
57 testimony as the basis for computing a capital structure that is consistent with a
58 BBB+ credit rating for IP, CILCO and CIPS. I have also evaluated whether
59 recent volatility in financial markets related to inflation concerns has changed my
60 recommended cost of equity capital for IP, CIPS and CILCO since I filed my
61 direct testimony. I conclude that while interest rates have recently increased by
62 .15% and dividend yields have risen slightly, these changes in financial markets

have not caused a sufficient movement to warrant a higher cost of equity than the 8% recommendation I made in my direct testimony.

Q. Summarize your updated return on rate base for the three companies.

A. Use of the coverage ratio formulas included in Staff testimony along with my cost of equity recommendation results in the following revised rates of return and capital structures for CIPS, CILCO and IP:

CIPS Capital Structure and Rate of Return

	Proportion	Cost of Capital	Weighted Cost
Short-Term Debt	0.49%	4.80%	0.02%
Long term	67.16%	6.21%	4.17%
Preferred	4.73%	5.02%	0.24%
Common	27.63%	8.00%	2.21%
Total	100.00%		6.64%

CILCO Capital Structure and Rate of Return

	Proportion	Cost of Capital	Weighted Cost
Short-Term Debt	20.04%	4.80%	0.96%
Long term	36.86%	7.01%	2.58%
Preferred	8.66%	5.25%	0.45%
Common	34.44%	8.00%	2.76%
Total	100.00%		6.76%

IP Capital Structure and Rate of Return

	Adjusted Ratios	Cost of Capital	Weighted Cost
Short-Term Debt	0.00%	4.80%	0.00%
Transitional Funding Trust	15.41%	5.97%	0.92%
Preferred Stock	41.07%	6.74%	2.77%
Common Equity	2.06%	5.01%	0.10%
Total Capital	41.46%	8.00%	3.32%
			7.11%

78 **II. GENERAL COMMENTS ON REBUTTAL TO STAFF**

79
80 **Q. In a data request, the company asked whether you believe “that the Ameren**
81 **Companies have paid or otherwise compensated the Illinois Commerce**
82 **Commission Staff to develop its recommended return on equity in this**
83 **proceeding.” When rebutting positions taken by Staff in your testimony**
84 **below, do you ascribe any untoward motives to their positions?**

85 A. Of course not. In her testimony, Janis Freetly made some very insightful
86 comments about the inappropriate techniques used by Ms. McShane -- for
87 example, when she pointed out problems in using a future payout ratio and when
88 she noted that it is inappropriate to use GDP growth in estimating utility company
89 growth rates. I do disagree strongly with various analytical techniques applied by
90 the Staff and much of the testimony below explains why I think Staff’s position is
91 unfair to ratepayers. However, my disagreement with Staff concerns specific
92 theoretical constructs and technical formulas. I have not implied that Staff has
93 any sort of dishonest motives. I take factual investigation that is part of these
94 proceedings seriously and it is disingenuous for Ameren to imply that I may
95 believe any company “compensates” the Commission’s Staff in return for
96 favorable testimony.

97
98 **Q. Why have you devoted a significant part of your testimony to rebutting**
99 **Staff’s positions?**

100 A. Historically, ALJs in ICC proceedings have accepted the position developed by
101 Staff with respect to the cost of equity capital. This is not surprising given the
102 technical nature of cost of capital analysis and given the fact that the cost of
103 equity is a number that cannot be directly observed. It may be an uphill battle to
104 prevail on cost of capital positions that differ from the Staff recommendation.
105 However, my client and I believe it is our duty to the rate payers of Illinois to
106 correct historical errors in estimating cost of capital that result in increased rates
107 for the ratepayers.

109 We hope that either the Staff or the Commission will carefully re-examine the
110 analytical methods that underlie cost of capital measurement in this case. As I
111 demonstrate in my testimony, if the Commission continues to adopt the
112 techniques advocated by Staff, Ameren and other utility companies in Illinois will
113 most assuredly earn more than their cost of capital and maintain market to book
114 ratios far in excess of 1.0. This is unacceptable because returns that exceed the
115 cost of capital lead to inefficient management decisions and are analogous to
116 taxes being imposed on ratepayers and pocketed by utility companies.

117
118 **Q. What are the principal ways that the approach taken by Staff**
119 **inappropriately inflates the measured cost of equity capital?**

120 A. Staff witnesses appear to use a checklist of analytical techniques in computing the
121 estimated cost of equity capital and many elements of this checklist bias the
122 estimated cost of capital in favor of utility companies. The technique Staff uses
123 estimating cost of equity using both the DCF and the CAPM techniques is
124 incorrect. Problems that I have identified with the Staff's approach are not merely
125 differences of opinion among cost of equity experts, such as may arise concerning
126 the choice of a comparative company samples or the time periods used for
127 computing dividend yields. Rather, they are analytical errors that lead to an
128 unambiguous upward bias in the cost of equity. Errors made in the estimation of
129 cost of equity capital by Staff (as well as utility company's cost of capital
130 advocates) have played a large role in explaining why utility returns are exceeding
131 the cost of capital by such a large margin as demonstrated by market to book
132 ratios that exceed 1.0.

133
134 **Q. How has Staff reacted to your suggestions to improve its analytical**
135 **approaches with respect to measuring the cost of equity?**

136 A. It appears that Staff may be reluctant to take a fresh look at its DCF and CAPM
137 models in its rebuttal testimony. Indeed, in the ComEd delivery services case, the
138 Staff devoted more space in its rebuttal testimony arguing against my work --
139 thereby promoting a higher cost of capital -- as it did in arguing against ComEd.

140 In that case, instead of investigating how information from Investment Banks
141 could provide enlightened perspective on the cost of capital and attempting to
142 secure back-up information to the analysis, Staff summarily dismissed the direct
143 evidence on the cost of equity capital. I believe the Staff has a responsibility to
144 make an objective and fair determination of the cost of capital. Information
145 involving the cost of capital applied by investment banks in major transactions as
146 well as market to book ratios above 1.0 should cause Staff to seriously revisit its
147 cost of capital checklist.

148
149 **Q. What are some of the items on the Staff checklist that have caused an**
150 **upward bias in favor of the company concerning the estimated cost of capital**
151 **in this matter?**

152 A. Some of the Staff's items are:

- 153 - Whether the quarterly discounting approach -- which mathematically
154 can be accurate only if we assume incorrectly that the utility company
155 collects all of its revenues and makes all of its cash expenditures on
156 the last day of the year -- should continue to be adopted.
- 157 - Whether the DCF model should continue to use sell-side analyst
158 growth rates, which have been demonstrated to be very optimistic in
159 overwhelming academic research and which result in unrealistic
160 assumptions with respect to earned return on equity for utility
161 companies.
- 162 - Whether the Value Line betas and other beta estimation approaches
163 that assume utility companies will somehow gradually become as risky
164 as typical un-regulated companies should be applied in cost of capital
165 measurement.
- 166 - Whether extensive research on the equity market premium which
167 demonstrates that 8-9% is far too high should continue to be ignored in
168 developing cost of capital estimates.

If the Staff does not reconsider its analytical techniques in rebuttal testimony, I urge the Commission to address these technical issues in detail. Correction of the Staff errors generates very different cost of capital estimates and leads to tens of millions of dollars in revenue requirement reduction.

III. REVISED CAPITAL STRUCTURE

Q. Summarize your comments on Staff's position concerning capital structure ratios in this case compared to the Staff's position in the ComEd delivery services rate increase case.

A. My review of the positions taken by Staff in this case and the ComEd delivery services case demonstrates the following:

- There is a glaring inconsistency between the Staff position expressed by Freetly and Pregozen in this case regarding capital structure and the position advocated by Staff witness Kight in the on-going ComEd delivery services case. The position taken by Staff in the ComEd case is far more favorable to ratepayers than the position advocated by witnesses Pregozen and Freetly in the instant case.

- There are no fundamental differences in the business risk of providing electricity delivery service in Northern Illinois for ComEd versus Central and Southern Illinois for Ameren due to the similarity in the auction for procurement of generation, the same regulators and the similarity of weather conditions. Given the similar business conditions, a dramatically different capital structure approach for Ameren and ComEd is unwarranted.

- The Staff position adopted by Sheena Kight in the ComEd case is equitable to ratepayers and represents a creative solution to setting capital structure policy for delivery services companies that will have a very different business risk profile after January 1, 2007. As I discussed in

testimony filed in that proceeding, her approach is reasonable given the changes in capitalization that will occur at the end of the transition period -- brought on by the implementation of the auction; by the elimination of commodity price risk; by a higher proportion of residential versus non-residential revenues; and, by the policy that will be established with respect to stand alone delivery service rates.

- The very high return on equity recommended by Staff – about 500 basis points above the 10 Year Treasury Bond yield is similar in both the ComEd and the Ameren cases (Staff witness McNally in the ComEd case and Staff witness Freetly recommended returns of about 10%.) Given the similarity in business risks, one would think that the equity returns should reflect the different financial risks.¹

Q. Describe the difference in the approach used by Staff in this case compared to the ComEd case.

A. The table and the graphs below show that while the Staff targeted a credit rating of between BBB and A in the ComEd case, the capital structures recommended by Staff in this case approximated an AA rating for the Ameren subsidiaries. The tables are taken directly from the Staff testimony (Kight in ComEd at line 165 and Freetly at line 414).

¹ The differences in capital structure proposed by Staff overwhelm the slight difference in return on equity. For example, in the case of CIPS, the difference in return on equity between the ComEd case of 10.19% and the 9.94% results in a difference in rate of return of 8.09% versus 7.97% whereas the difference in capital structure in the ComEd case and the Ameren case causes a difference in rate of return of 7.30% versus 7.97%.

223

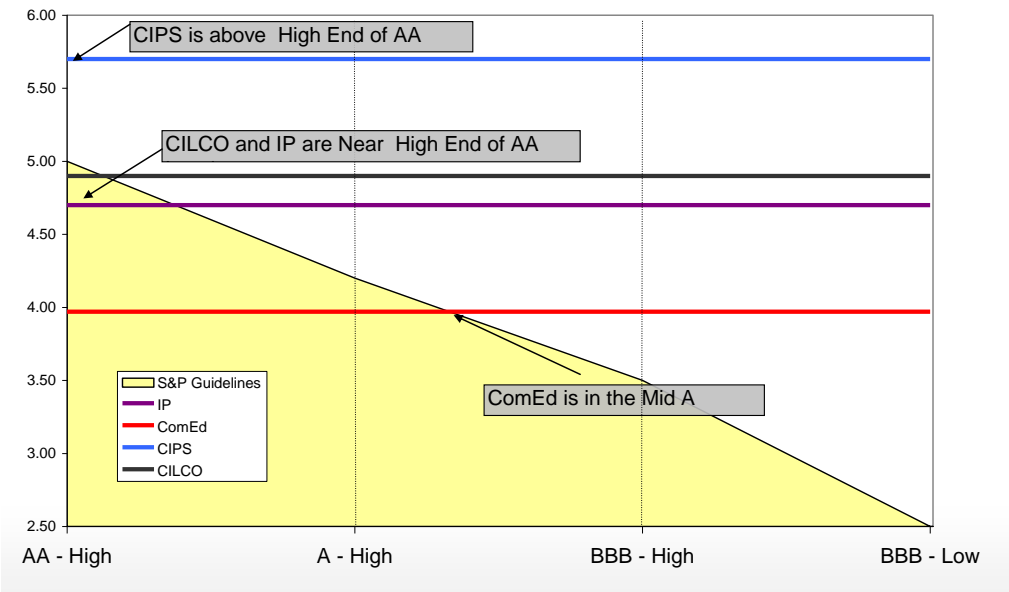
	AA	A	BBB
Financial Guideline Ratios			
FFO/IC	4.2-5X	3.5-4.2X	2.5-3.5X
FFO/Debt	28-35%	20-28%	12-20%
Staff Proposal - CILCO			
FFOIC	4.8X		
FFO/Debt		24.00%	
Staff Proposal - CIPS			
FFOIC	5.7X		
FFO/Debt	29.20%		
Staff Proposal - IP			
FFOIC	4.7X		
FFO/Debt		24.10%	
Staff Proposal - ComEd			
FFOIC		3.79X	
FFO/Debt			18.07%

224
225

226 The two graphs below illustrate the inconsistencies in the Staff's approach
227 between the two cases.

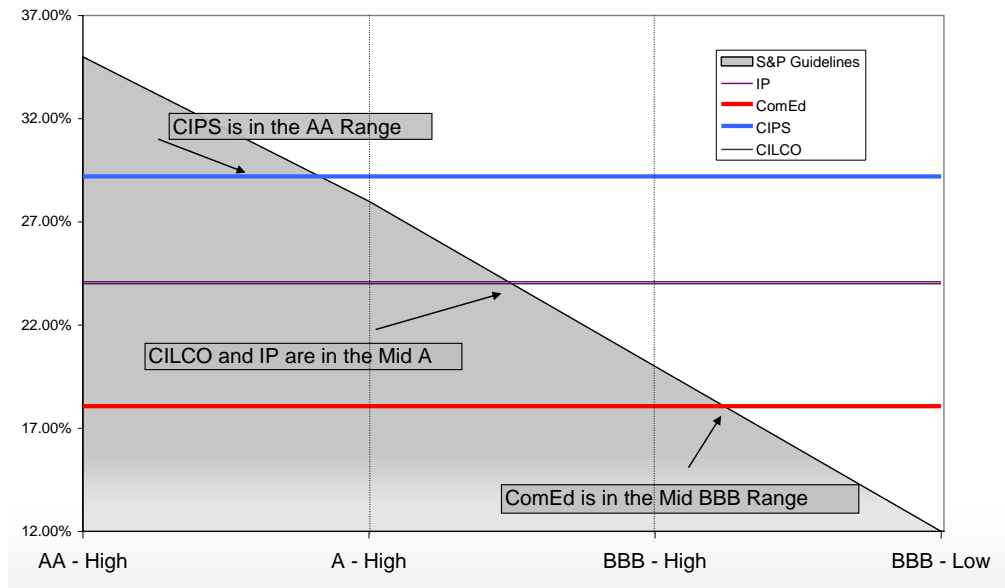
228
229

Funds From Operations/Interest Coverage



230

Funds From Operations/Debt



Q. How did Staff witnesses explain their positions on capital structure in the two cases?

A. Statements made in the testimony of Ms. Sheena Kight in the ComEd case and Ms. Janis Freetly in this case demonstrate the stark difference in their approaches.

In the ComEd case Staff made the following statements with respect to why a BBB rating is appropriate for ComEd:

Q. Why is a BBB credit rating indicative of an appropriate adequate degree of financial strength?

A credit rating of BBB indicates an adequate capacity to meet financial commitments. A debt issuer with a BBB credit rating has access to debt capital under most, if not all, financial market conditions while taking greater advantage of the tax-deductibility of debt interest than capital structures that support higher credit ratings. (Kight testimony at lines 184-190, emphasis added)

According to S&P, utilities with a business profile score of 4 should have a funds from operation (“FFO”) to interest coverage ratio between 3.5X and 4.2X for an A-rating and 2.5X to 3.5X for

a BBB-rating. The benchmark ranges for the FFO to total debt coverage ratio is 20%-28% for A-rated utilities and 12%-20% for BBB-rated utilities. The Cost Based Capital Structure results in a FFO to interest coverage ratio of 3.79X which is indicative of an A credit rating and a FFO to total debt coverage ratio of 18.07% which is indicative of a BBB credit rating. *Thus, I conclude that the Cost Based Capital Structure, when combined with Staff's recommendations for the other components of the FFO ratios, is indicative of a level of financial strength that is commensurate with at least a BBB credit rating.* (Kight testimony at lines 148-161, emphasis added)

Staff did an about face in the Ameren case and inexplicably determined that much higher bond ratings are required for a company in Illinois providing delivery services. This is demonstrated by the following testimony presented by Ms. Freetly:

Staff's recommended revenue requirement for CILCO results in a funds from operations ("FFO") to interest coverage ratio of 4.9X which lies at the upper end of the benchmark range for an AA credit rating and a FFO to total debt coverage ratio of 24.0% which falls within the benchmark range of an A credit rating. Staff's recommended revenue requirement for CIPS results in a FFO to interest coverage ratio of 5.7X which lies above the benchmark range for an AA credit rating and a FFO to total debt coverage ratio of 29.2% which lies at the lower end of the benchmark range for an AA credit rating. Staff's recommended revenue requirement for IP results in a FFO to interest coverage ratio of 4.7X which lies within the benchmark range for an AA credit rating and a FFO to total debt coverage ratio of 24.1 % which falls within the benchmark range of an A credit rating. *Thus, I conclude that Staff's revenue requirement recommendations, including my cost of equity recommendation, are indicative of a level of financial strength that is commensurate with an AA- credit rating for CILCO, AA credit rating for CIPS and A+ credit rating for IP.* (Staff Exhibit 4.0, line 395, emphasis added)

Q. Has Staff explained the very different approaches it took on this fundamental policy issue in the two delivery services rate increase cases?

A. No. There is certainly no financial explanation for using a target credit rating of AA for one company (CIPS) and a BBB rating for another company (ComEd).

Once it is established that the equity ratio is sufficient to allow a utility company to access capital, the credit ratings targeted in ratemaking are a matter of policy. Capital structure policy should not depend upon the assignment of individual Staff members to the case or upon the geographic location of a utility (absent a demonstrated financial effect.) The difference in Staff positions in the two cases are not based on an analysis of debt capacity and they are not derived from a consistent approach to evaluating the probability of default -- the ultimate determinant of bond ratings.

Q. Can the guidelines used by Staff in the ComEd case be applied to IP, CILCO and CIPS in this case?

A. Yes. One can compute how the capital structure of IP, CILCO and CIPS would have to change in order for their financial ratios to be the same as the guidelines used by Staff witness Kight in the ComEd case. To make this computation I have varied the proportion of debt and equity in the capital structure of the three companies until financial ratios are the same as those used by Ms. Kight. All of my calculations are developed directly from data presented in the testimony of Staff witnesses Pregozen and Freetly. The calculations also use the return on equity recommended by Staff. (This contrasts with the calculations presented in my direct testimony that used actual financial information rather than rate case data.)²

Q. When using the approach that Staff applied in the ComEd case, what capital structure proportions result for CILCO, CIPS and IP?

A. The table below shows the capital structure proportions for CILCO, CIPS and IP that result from uniform application between ComEd and Ameren cases. After

² When computing the level of debt and equity in IP, CILCO and CIPS's capital structure that would make the FFO interest coverage and the debt to FFO ratios the same as those proposed by Staff in the ComEd case, a couple of technical issues arise involving allocation of debt between short-term debt and long-term debt and how the cash flow coverage and the debt to cash flow ratio should be weighted to make the ComEd and Ameren results equivalent. The calculations below adjust short-term debt and long-term debt in proportion to the existing capital structure. In addition, the two cash flow ratios are given equal weights in deriving the capital structure weights.

showing the ComEd capital structure, the table presents the capital structure proposed by Staff in this case and the adjusted capital structure that would be consistent with financial ratios used by Staff in the ComEd case. For each capital structure, the resulting FFO to interest coverage and the debt to FFO are shown below the debt and equity proportions.

	ComEd	CILCO		CIPS		IP	
	Kight Percent	Pregozen Percent	Adjusted Percent	Pregozen Percent	Adjusted Percent	Pregozen Percent	Adjusted Ratios
Short-Term Debt		16.12%	19.42%	0.33%	0.46%	0.00%	0.00%
Transitional Funding Trust Notes						15.41%	15.41%
Long term	62.12%	29.66%	35.72%	46.07%	63.96%	30.97%	39.84%
Preferred		8.66%	8.66%	4.73%	4.73%	2.06%	2.06%
Common	37.88%	45.56%	36.20%	48.87%	30.85%	51.56%	42.69%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
FFO/Interest Coverage	3.97	4.86	3.93	5.70	3.94	4.72	3.85
Debt/FFO	18.07%	24.1%	18.3%	29.15%	18.22%	24.09%	18.61%

The table demonstrates that common equity ratios using the approach taken in the ComEd case are far below the ratios proposed by Staff witness Pregozen.

Q. Do you recommend that the Commission use the capital structures shown in the above table when it establishes Ameren's rate of return on rate base?

A. No. For reasons explained in my direct testimony, I continue to assert that the Commission should use BBB+ guidelines in developing the capital structure for IP, CILCO and CIPS. These guidelines are somewhat lower than the ratio levels used by Staff in the ComEd case. In addition, the ratios are affected by the ROE and I have included my recommendation of 8%. Assuming BBB+ financial ratio guidelines and using the data and formulas included in the testimony of Mr. Pregozen and Ms. Freetly results in the following capital structures.³

³ The capital structure proportions in the above table differ slightly from those used in my direct testimony because I relied on the Staff data rather than information included in Ameren's financial statements.

	BBB Avg	CILCO		CIPS		IP	
		Pregozen Percent	Adjusted Percent	Pregozen Percent	Adjusted Percent	Pregozen Percent	Adjusted Ratios
Short-Term Debt		16.12%	20.04%	0.33%	0.49%	0.00%	0.00%
Transitional Funding Trust Notes						15.41%	15.41%
Long term		29.66%	36.86%	46.07%	67.16%	30.97%	41.07%
Preferred		8.66%	8.66%	4.73%	4.73%	2.06%	2.06%
Common		45.56%	34.44%	48.87%	27.63%	51.56%	41.46%
Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
FFO/Interest Coverage	3.25	4.86	3.59	5.70	3.59	4.72	3.52
Debt/FFO	18.00%	24.1%	16.1%	29.15%	16.09%	24.09%	16.48%

IV. COST OF EQUITY ESTIMATION FROM DCF MODEL

Q. Summarize the technical analysis underlying the cost of equity capital presented by various witnesses using the DCF model in the case.

A. Ameren has emphasized the fact that my return on equity recommendation of 8% is below Staff's recommendation of about 10% and well below the recommendation made by other intervenors. While this is true, when one looks behind the analysis of each witness, it becomes apparent that each study contained a DCF estimate of below 9% (the Staff estimate is corrected for mistakes in the use of quarterly discounting.) The table below shows DCF estimates using sell-side growth rate estimates. (Presentation of this table in no way means that I agree with any of the approaches – all are biased upwards because of the use of sell-side analyst growth forecasts.)

	DCF Estimate	Final Recommendation
CUB with Sell-side Analyst Growth	8.62%	8%
McShane I/B/E/S Growth	8.80%	11-12.5%
Staff Corrected for Annual Discounting	8.87%	9.94-10.08%
Cuthbert	8.62%	9.46%

The DCF results shown in the table above do not suggest my recommendation is radical. Indeed, each DCF estimate is more than 100 basis points below the 9.94%-10.086% recommendation made by Staff. To the extent that witnesses believe the

DCF model reflects investor requirements, other experts have recommended a policy that sets the rate of return above the cost of capital. Recommending returns to be set above the cost of capital (even for interveners) explains in part why market to book ratios are so far above 1.0 across the industry. It might seem a bit old fashion for me to suggest that the rate of return really should be set to the cost of capital, but no compelling evidence has been presented in the case that ratepayers are better off if Ameren is earning more than its cost of capital.

Q. How have you organized your rebuttal testimony on the subject of cost of equity capital?

A. My emphasis is on Staff's cost of equity estimate. I begin by discussing the errors in Staff's DCF model and then I discuss problems with Staff's CAPM analysis.

Q. Summarize the various ways that Staff's DCF analysis should be corrected.

A. Correction of the Staff's DCF model involves:

- Discounting dividends or earnings on an annual rather than on a quarterly basis so that a utility company that is earning continual revenues throughout the year does not earn more than its cost of capital;
- Eliminating the use of sell-side analyst growth rates constructed by companies such as Zacks, Thompson and Value Line which bias the estimated cost of equity upward;
- Including results from a price to earnings ratio valuation model rather than only relying on the dividend discount model;
- Using a two stage analysis with movement of market to book ratios toward 1.0 in the long run when the market to book ratio is significantly above or below 1.0; and
- Summarizing small samples with the median rather than the mean to avoid distortions by single companies that have high or low cost of equity estimates.

It is not surprising that Ameren's consultant argue for approaches with respect to many of the issues that increase the estimated cost of equity. It is more disconcerting that Staff uses methods that bias the cost of equity upwards.

Q. How is Staff's cost of equity calculation affected by correction of the quarterly discounting error?

A. I have corrected the quarterly discounting error by using Staff's stock price information and the forward dividend per share tabulated on the Yahoo website. Correction of the quarterly discounting mistake results in a cost of capital estimate of 8.87% instead of 9.11% as shown in the table below.

Company	Staff DCF Estimate	Staff Earnings Growth from Sell-side Analysts	Implied Dividend Yield in Staff DCF	Stock Price in Staff Analysis	Forward Dividend Yield from Yahoo	Corrected Dividend Yield	Effect of Quarterly Error	Corrected DCF with Staff Growth
AGL Resources Inc.	9.06%	4.67%	4.39%	\$35.95	1.48	4.12%	-0.27%	8.79%
Energy East Corp.	9.37%	4.50%	4.87%	\$25.22	1.16	4.60%	-0.27%	9.10%
Idacorp Inc.	8.48%	4.50%	3.98%	\$32.71	1.20	3.67%	-0.31%	8.17%
NiSource Inc.	8.37%	3.63%	4.74%	\$20.74	0.92	4.44%	-0.30%	8.07%
Peoples Energy Corp.	10.52%	4.00%	6.52%	\$36.05	2.18	6.05%	-0.47%	10.05%
Pepco Holdings Inc.	8.07%	3.40%	4.67%	\$23.13	1.04	4.50%	-0.17%	7.90%
SCANA Corp.	9.06%	4.67%	4.39%	\$40.04	1.68	4.20%	-0.19%	8.87%
Southern Co.	9.73%	4.75%	4.98%	\$32.67	1.49	4.56%	-0.42%	9.31%
WGL Holdings Inc.	8.70%	4.00%	4.70%	\$30.06	1.35	4.49%	-0.21%	8.49%
Wisconsin Energy Corp.	9.62%	7.20%	2.42%	\$40.39	0.92	2.28%	-0.14%	9.48%
Xcel Energy Inc.	9.21%	4.17%	5.04%	\$18.30	0.86	4.70%	-0.34%	8.87%
Average	9.11%	4.50%	4.61%			4.33%	-0.28%	8.83%
Median	9.06%	4.50%	4.70%			4.49%	-0.27%	8.87%

Use of median rather than mean reduces estimate from 9.11% to 9.06%

Dividend yield reduction from using forward dividend rather than quarterly assumption

Q. Why do you use the median rather than the mean to summarize the data in Staff's sample?

A. Because Staff's comparable sample is relatively small, the average is strongly influenced by the cost of equity estimate for Peoples Energy (10.52%) and Southern Company (9.73%). Further, since the cost of equity analysis is attempting to find investor hurdle rates for pure play regulated delivery services companies, the median will place less weight on companies that have higher risk

because of involvement in unregulated activities. Without Peoples and Southern, Ms. Freetly's DCF estimate would have been 8.88%. Given the potential for one or two companies to have such a large effect on the average, practitioners generally use the median rather than the average in valuations. As shown on the table above, even if both Ms. Freetly's data and her approach are accepted, when the median instead of the mean is used, the cost of equity is 9.06% rather than 9.11%.

Q. Discuss differences in the DCF model estimates that arise from use of analyst growth rates rather than sustainable growth that is measured by the ROE multiplied by the retention rate.

A. In my direct testimony I quoted various research studies that demonstrated how using analyst growth rates in the DCF causes an upward bias in the cost of capital estimate. I explained that a more reasonable way to estimate earnings growth rates is to multiply the forward return on equity by the retention rate.⁴ I do not repeat that discussion here, but I do use the Zacks growth rates used by Staff to illustrate the bias. This analysis demonstrates how using analyst estimated earnings growth rates causes an upward bias in the DCF model.

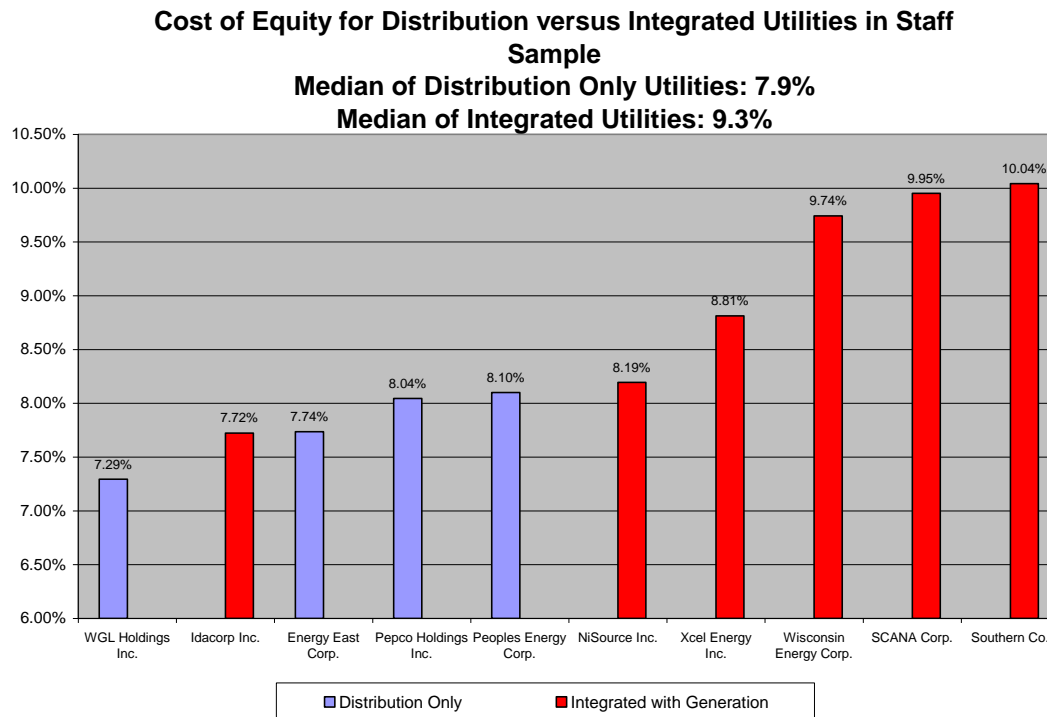
Q. How is Staff's cost of equity calculation affected by the use of growth rates from sell-side analysts?

A. It is overstated. As research shows, the upward bias in growth rates means that the DCF will also be upwardly biased because investors who buy and sell shares generally recognize that the growth rates published by sell-side analysts will not be realized. Application of the retention rate multiplied by return on equity formula (BxR) reduces the DCF estimate in Staff's sample to 8.19% as shown on the table below.

⁴ The forward ROE still has upward bias because the next year ROE is based on analyst forecasts.

Company	Staff DCF Estimate	Staff Earnings Growth from Sell-side Analysts	Forward Dividend Yield from Yahoo	Corrected Dividend Yield	Forward Payout from Yahoo	Forward ROE from Yahoo	Growth from ROE x Retention	Corrected DCF Estimate
AGL Resources Inc.	9.06%	4.67%	1.48	4.12%	55%	13.9%	6.3%	10.39%
Energy East Corp.	9.37%	4.50%	1.16	4.60%	66%	9.1%	3.1%	7.74%
Idacorp Inc.	8.48%	4.50%	1.20	3.67%	55%	9.0%	4.1%	7.72%
NiSource Inc.	8.37%	3.63%	0.92	4.44%	58%	8.8%	3.8%	8.19%
Peoples Energy Corp.	10.52%	4.00%	2.18	6.05%	84%	12.5%	2.1%	8.10%
Pepco Holdings Inc.	8.07%	3.40%	1.04	4.50%	61%	9.1%	3.5%	8.04%
SCANA Corp.	9.06%	4.67%	1.68	4.20%	56%	13.0%	5.8%	9.95%
Southern Co.	9.73%	4.75%	1.49	4.56%	65%	15.8%	5.5%	10.04%
WGL Holdings Inc.	8.70%	4.00%	1.35	4.49%	72%	9.9%	2.8%	7.29%
Wisconsin Energy Corp.	9.62%	7.20%	0.92	2.28%	35%	11.5%	7.5%	9.74%
Xcel Energy Inc.	9.21%	4.17%	0.86	4.70%	61%	10.5%	4.1%	8.81%
Average	9.11%	4.50%		4.33%		11.20%	4.40%	8.73%
Median	9.06%	4.50%		4.49%		10.54%	4.05%	8.19%

The 8.19% number in the above table is somewhat higher than the estimate I made because of the inclusion of companies that own generating capacity. In the table, NiSource, SCANA, Southern Companies, Wisconsin Energy and Xcel Energy all own generation and they all have an estimated cost of equity higher than the median of 8.19%. With the exception of AGL Resources which has significant non-regulated subsidiary companies and income from trading activities, the distribution companies – Energy East, Peoples, Pepco and WGL holdings -- have lower cost of capital than the median as shown on the graph below. (AGL Resources is not included on the graph).



Q. If analyst growth rates exceed the growth rate computed from the BxR formula, how is the DCF cost of capital affected?

A. When the analyst growth rate exceeds the growth rate computed from the BxR formula, then the analysts are implicitly assuming either:

1. the return on equity is increasing, or
2. the dividend payout ratio is decreasing.

I discussed how the DCF formula produces an upward bias when the dividend payout ratio is declining in my direct testimony. That analysis showed how the DCF model does not produce accurate estimates of the unobservable discount rate when payout ratios are changing. Ms. Freetly also recognized this problem when she critiqued Ameren's cost of equity analysis.

A similar problem arises in the DCF formula when the growth rate includes an assumption that the ROE is increasing. Here again, when the DCF assumption that everything is constant does not hold, the model simply does not work. In other words, even if the sell-side analyst growth estimates are unbiased but they

include an assumption that the ROE is increasing, the DCF model produces a biased estimate of the unobservable discount rate. When market to book ratios in the utility industry demonstrate companies are consistently earning more than their cost of capital it is particularly important not to put our head in the sand and use a model that we know is wrong.

Q. Describe results that occur from the DCF formula when the ROE is increasing.

A. To investigate how the DCF formula works when the ROE is increasing, I have used the DCF evaluation model that I introduced in my direct testimony. This model computes the value of a share by assuming a given discount rate (i.e. the number is not un-observable in the model) and then the model discounts future dividend cash flows to the investor under alternative ROE and payout scenarios. Discounted cash flow from dividends establishes the value of a share and the ROE and payout determine growth rates. The formula for establishing value is simply the present value of cash flow received from dividends discounted at the true cost of capital:

$$\text{Equity Value} = \text{PV}(\text{ROE}_t \times \text{Investment Base}_t \times \text{Payout Ratio}_t)$$

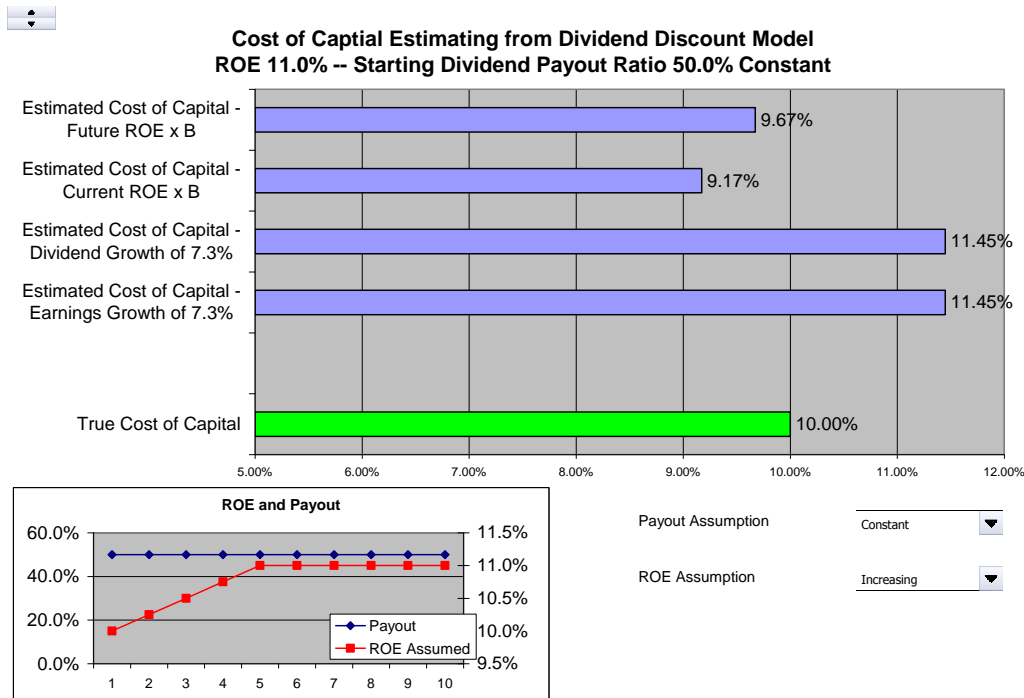
$$\text{Growth Rate} = \text{Compound Annual Growth in Earnings over Five Years}$$

With the k , P and g all known, the estimates made by the DCF model are computed to test whether the predicted cost of capital conforms to true cost of capital using the formula:

$$\text{Estimated } k = D_1/P(\text{using actual } k) + \text{Actual } g.$$

The graph below shows how the DCF model estimates the unobservable cost of capital when the ROE is increasing for the next five years and then levels out. In the illustrative example, the true cost of capital is 10% while the inferred cost of

capital depends on how growth is estimated. The graph shows in the situation where ROE is increasing, the DCF model does not produce accurate estimates of the cost of equity. This means that even if the increasing growth rate from the ROE is an unbiased estimate, the DCF formula is wrong.



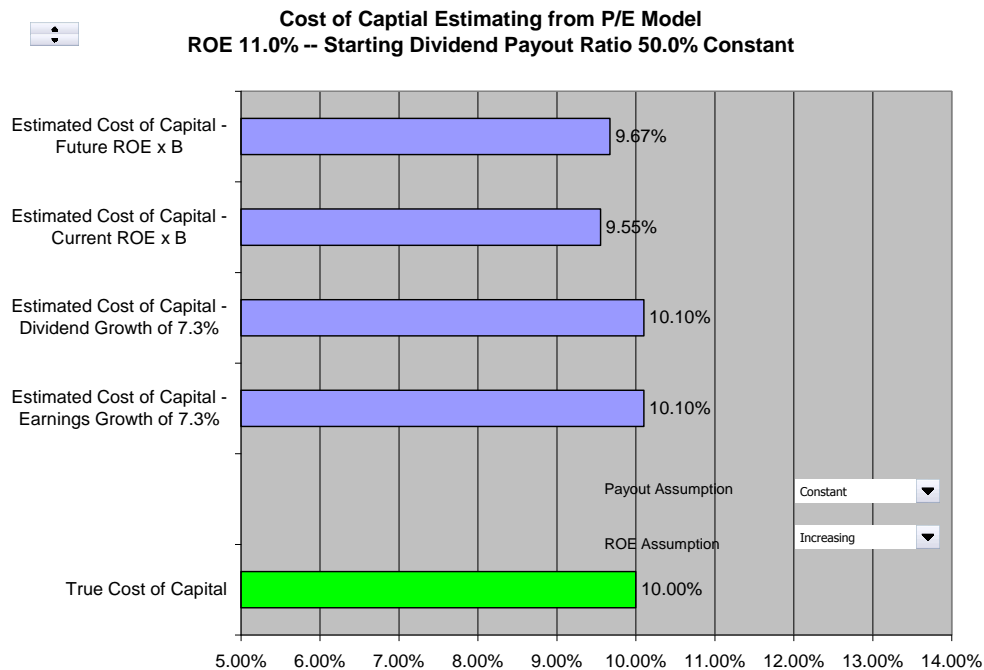
The simulation model implies that when the ROE is increasing, the DCF model produces an estimate of 11.45%, which overstates the true cost of capital of 10%. This analysis means that even if sell-side analysts are correct in assuming the ROE will increase, the use of their growth rates in the DCF model will overstate the true unobservable cost of capital.

Q. What biases exist in the price to earnings ratio formula when the ROE is increasing?

A. Using the same procedure and evaluation model that I discussed above, I have tested the performance of the P/E ratio formula. In this case, the cost of equity is estimated by the P/E formula rather than the dividend discount model. The estimated cost of capital is computed from the formula:

Estimated $k = [1/(\text{Actual } g/\text{Actual ROE})]/P/E$ (from known k) + Actual g

The graph below illustrates that this method is far more robust and produces less of a bias than the dividend discount model.



The graph demonstrates that whereas the cost of equity is biased by 1.45% using the dividend discount model, it is only biased by .1% using the P/E model.

Q. What cost of capital estimates result from applying the P/E ratio formula with Staff's sample?

A. Using a combination of the forward P/E ratios from the database that I used in my direct testimony and the biased sell-side analyst growth rates used in Staff's analysis produces a median cost of capital of 8.68% as shown on the table below.

	Forward P/E Ratio from Yahoo	Staff Growth Rate	Forward ROE from Yahoo	Cost of Capital
AGL Resources Inc. (ATG)	13.28	4.67%	13.94%	9.68%
Energy East Corp. (EAS)	14.11	4.50%	9.10%	8.08%
IdaCorp, Inc. (IDA)	14.85	4.50%	9.02%	7.87%
Nisource Inc. (NI)	13.12	3.63%	8.84%	8.12%
Peoples Energy Corp. (PGL)	14.50	4.00%	12.46%	8.68%
Pepco Holdings Inc. (POM)	13.83	3.40%	9.06%	7.92%
SCANA Corp. (SCG)	13.46	4.67%	12.97%	9.43%
Southern Co. (SO)	14.82	4.75%	15.82%	9.47%
WGL Holdings Inc. (WGL)	16.12	4.00%	9.94%	7.71%
Wisconsin Energy Corp. (WEC)	15.24	7.20%	11.48%	9.65%
Xcel Energy Inc. (XEL)	13.12	4.17%	10.54%	8.78%
Average		4.50%		8.67%
Median		4.50%		8.68%

While this estimate is above my 8% recommendation, it is obviously far closer to 8% than to the 10% Staff recommendation. Further, the 8.68% estimate still includes the upward biases from optimistic sell-side analyst growth projections and it also still includes the companies that own generation and have a higher estimated cost as I discussed above.

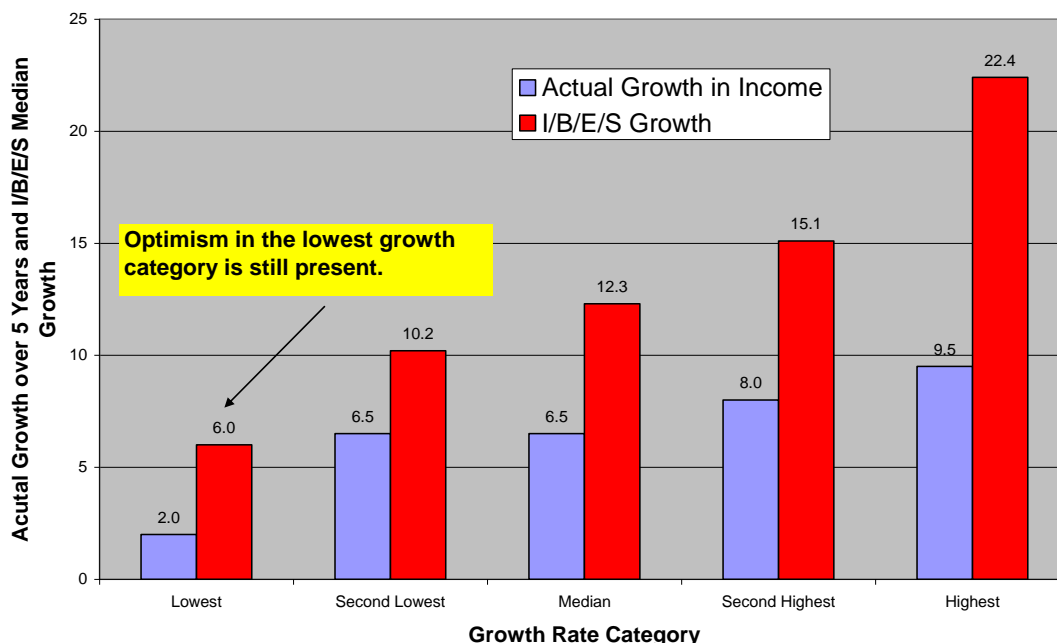
Q. Does the bias in sell-side analyst growth rates only exist for high growth companies and not for low growth companies?

A. No. While there is probably more of a bias for high growth companies, the bias exists across the spectrum of companies. In previous testimony Staff has acknowledged upward bias in sell-side analyst growth rates but asserted that low growth companies do not have such a bias. This is not an accurate representation of the literature. The graph below compares the actual and estimated growth rates over prospective five years for companies with different expected growth levels.⁵ It shows that for the lowest growth category, the actual growth of 2% was a far cry from the I/B/E/S estimate of 6%.⁶

⁵ Information on the graph is taken from Chan, L., Karceski, j and Lakonishok, J, 2003, The Level and Persistence of Growth Rates, Journal of Finance, 58, p. 673.

⁶ The authors also include a portfolio measure of growth. However they discount this measure for low growth firms as demonstrated by the following quote: "This difference from the earlier results based on individual stocks reflects several methodological details, specifically the use of value-weights, the inclusion in the portfolios of non-surviving firms as well as firms with negative income, and the use of a time-series average of the yearly portfolio growth rates rather than the cross-sectional medians. In particular, since

IBES Growth and Actual Growth from Chan Article



555

556

557 **Q. Turning to the issue of quarterly discounting, how have you evaluated**
 558 **whether application of the quarterly DCF model allows a company to earn its**
 559 **cost of capital?**

560 **A.** To investigate whether the quarterly DCF model allows a utility company to earn
 561 its cost of capital, I have constructed a hypothetical example that illustrates the
 562 issue. In this hypothetical case, I assume a company is paying a dividend of \$3
 563 per quarter and the current market value of its share is \$10. Furthermore, I
 564 assume that the company will cease to exist at the end of one year. The simple
 565 example magnifies the effect of quarterly relative to annual compounding.

566

567 If the annual DCF model is applied in measuring the cost of capital, the \$3
 568 dividend is accumulated to \$12 at the end of the year. Using a \$12 dividend
 569 relative to the \$10 market value, the inferred cost of equity is 20% $([12/10] - 1)$.

firms with low IBES forecasts generally tend to start with low or negative values of income before extraordinary items at the portfolio formation date, the growth rate over the following year is likely to be high.”

570 If the quarterly dividend model is applied, the inferred cost of equity capital is
571 much higher. With quarterly dividends, added value is obtained by investors from
572 receiving dividends earlier (investors then can re-invest their dividends).
573 However, if the market value is still \$10 – as it was in the case with annual
574 discounting– investors must be attributing more risk to the earlier received cash
575 flows. (If they were not attributing more risk to the dividends, investors would
576 place a higher value than \$10 on the expected cash flow.) The discount rate from
577 a quarterly annuity of \$3 that yields a present value of \$10 is 7.71% per quarter.
578 Converting the quarterly return of 7.71% to an annual discount rate implies an
579 annual cost of equity of 34.61% $[(1 + 7.17\%)^4 - 1]$.

580
581 Using quarterly instead of annual discounting makes a very big difference in the
582 simple example – the cost of equity is 20% with annual discounting and is
583 34.61% with quarterly discounting. (I round this to 35% in the discussion below.)
584 The question raised is whether a regulatory commission should set the rate of
585 return to 20% from application of the annual DCF model or whether a rate of
586 return should be 35% from application of the quarterly DCF model.

587
588 **Q. Can you prove that the cost of capital inferred from the annual DCF instead**
589 **of the quarterly DCF will allow a company to appropriately recover its cost**
590 **of capital?**

591 A. Yes. The appropriateness of the annual DCF model can be demonstrated by
592 considering what happens to the utility company if either the 20% estimate from
593 the annual model or the 35% estimate from the quarterly model is applied as the
594 return on investment in a regulatory context. Since the utility company lasts only
595 for a year, the company must recover its initial investment of \$10 as well as a
596 return commensurate with its cost of capital in the single year.

597

To test the annual DCF model versus the quarterly DCF model from the perspective of producing a fair return on investment given the observed market value, one can compute the internal rate of return realized by investors under alternative scenarios. Since dividends are realized on a quarterly basis, the investors should realize an internal rate of return of 35%. In considering the quarterly compounding issue I compute the internal rate of return earned under the following scenarios:

1. The utility is granted a return using the 20% result from the annual model and the utility realizes all of its cash flows at the very last day of the year.
2. The utility is granted a return using the 20% annual DCF estimate, but it receives its cash flows at the end of each quarter.
3. The utility is granted a return using the 35% result from the quarterly DCF model and it realizes all of its cash flows at the end of the year.
4. The utility is granted a return using the 35% cost of capital and it receives cash flows at the end of each quarter.

If the utility receives its investment of \$10 plus a return on that investment equal to the cost of capital only at the very end of the year, the quarterly model is indeed appropriate from the standpoint of allowing a company to earn its cost of capital. Here, where the cash flows are received at the end of the year and the utility receives a return of 20%, it will receive \$12 at the end of the year. In this case its internal rate of return is 20% (negative \$10 at the beginning of the period and positive \$12 at the end of the annual period.) Since the annualized cost of capital from the quarterly DCF model is 35%, the utility does not recover its cost of capital. Therefore, if a utility company in fact realized all of its cash flows at the end of each year, the annual DCF analysis would not allow a company to earn its cost of capital.

The example becomes more interesting if the annual return of 20% plus the capital investment of \$10 is recovered over four quarters. The total cash flow is still \$12 over the year, but in this case the money is divided into four quarterly installments of \$3. When cash is received quarterly, even though the commission has granted a return of 20%, the company's realized return is 35% (the outflow of \$10 followed by four inflows of \$3 produce an annualized rate of return of 35%.) Application of the annual DCF is shown on the table below:

Rate of Return from Application of Annual DCF

Investment Base		10.00	10.00	10.00	10.00
Use of Annual DCF					
Annual Rate of Return	20%				
Annual Cash Flow					12.00
Annual Cash Flow	-10.00				12.00
Annual Realized IRR	20.0%				
Annual Rate of Return with Quarterly Realization		3.00	3.00	3.00	3.00
Cash Flow from Quarterly Realization	-10.00	3.00	3.00	3.00	3.00
IRR from Quarterly Realization	7.71%				
Annualized IRR	34.61%				

The rate of return that is realized from application of the annual model with a 20% rate of return does in fact equate to the cost of capital of 35%. This result is worthy of restatement: if the annual and not the quarterly DCF model is applied in determining the rate of return, and if the rate of return is realized on a quarterly basis because utility companies do not earn all of their cash flows at the end of the year, then the annual DCF model rather than the quarterly allows the company to earn its cost of capital.

Q. Continue with the hypothetical example and explain why the quarterly DCF model results in utilities being able to recover more than their cost of capital.

A. The over-recovery implicit in the quarterly DCF model is demonstrated by considering the third and fourth scenarios mentioned above where the utility company is granted a return using the 35% estimate that comes from a quarterly DCF model. As in the discussion of the first two scenarios, I first consider the

realized internal rate of return assuming cash flows are realized only at the very end of the year and then I make the more realistic assumption that cash flows are realized at the end of each quarter. By setting the return at the 35% level, the company realizes total cash flow over the year of \$13.50 rather than \$12 if the 20% return was used.

To assess results of the quarterly DCF model, I first consider the case where the \$13.50 of cash flow is only realized on the very last day of the year. Here, the company does indeed realize the risk adjusted cost of capital of 35% inferred from the quarterly DCF model (the outflow of \$10 is followed by an inflow of \$13.50 at the end of the year yielding an internal rate of return of 13.5%.) However, and most important, if the \$13.50 cash flows are realized in four increments on a quarterly basis, then the company earns a return of 63% as shown on the table below.

Rate of Return from Application of Quarterly DCF

Investment Base		10.00	10.00	10.00	10.00
Use of Quarterly DCF					
Annual Rate of Return	34.59%				
Annual Cash Flow					13.46
Annual Cash Flow	-10.00				13.46
Annual Realized IRR	34.59%				
Annual Rate of Return with Quarterly Realization					
Cash Flow from Quarterly Realization	-10.00	3.36	3.36	3.36	3.36
IRR from Quarterly Realization	13.04%				
Annualized IRR	63.29%				

In reality, utility companies recover cash flows on a continual basis over the course of a year and not all at the end of the year. This means the quarterly DCF adjustment allows a company to recover more than its true cost of capital. The example demonstrates that the ICC should reject application of the quarterly DCF in this and future proceedings.

683 **Q. Is the issue of quarterly discounting simply a matter of working capital that**
684 **will be resolved through inclusion of working capital in rate base?**

685 A. No. In the ComEd case Staff dismissed the mathematical demonstration of the
686 errors in using quarterly discounting by suggesting that my analysis is simply a
687 working capital matter. In fact, the mathematical equations above have nothing
688 on earth to do with working capital.⁷ If the utility receives cash flow each quarter
689 and also pays out dividends in each quarter, there is no working capital
690 requirement. To suggest that the mathematical proof that the quarterly discounting
691 in the DCF allows a company to earn more than its cost of capital has something
692 to do with working capital is a weak attempt to simply confuse the issue.

693
694 **Q. Is there literature that confirms your analysis of quarterly discounting?**

695 A. Yes. Dr. Richard Bower, a professor at Dartmouth, published an article in 1992
696 that confirms my position. Dr. Bower concludes:

697
698 Authors who advocate quarterly discounting are correct when
699 they say that the conventional cost of equity calculation is a
700 downward-biased estimate of the market discount rate. *They are*
701 *not correct, however, in concluding that it has a bias as a*
702 *measure of required return. As a measure of required return,*
703 *the conventional cost of equity calculation (k^*) [$D_1/P_0 + g$],*
704 *ignoring quarterly compounding and even without adjustment*
705 *for fractional periods, serves very well....* While the
706 conventional cost of equity may have a downward bias as an
707 estimate of the market discount rate, it is a correct and unbiased
708 estimate of a utility's required return.⁸
709

710 Dr. Bower specifically discusses Commonwealth Edison as a case study and goes
711 on to describe why the quarterly discounting adjustment is not made in many
712 jurisdictions including at the FERC:

713
714 *The conventional measure of cost of equity (k^*) [$D_1/P_0 + g$], a*
715 *measure that does not consider quarterly compounding and*

⁷ I suppose that if the utility company really received all of its revenues at the end of the year it would have a very high level of working capital and since working capital is included in rate base, Staff's quarterly method would be wrong even in this extreme hypothetical case.

⁸ Bower, Richard S., The N-Stage Discount Model and Required Return: A Comment, The Financial Review Vol. 27 No. 1 February 1992 Pp. 141-149

usually fails to consider fractional periods, *has no downward bias as an estimate of required return* (r). It is, as the Federal Energy Regulatory Commission (FERC) and other regulatory bodies have concluded, a fair measure to use in calculating the allowed return for a utility. The FERC, in its Generic Determination of Rate of Return on Common Equity for Public Utilities, embraces the [annual discounting] analysis in Order No. 442 , reconsiders it in Order No. 442-A, and settles on the [annual discounting analysis derived] required return I develop here in Order No. 461. (Emphasis added)

Dr. Bower makes a small adjustment for the timing between the measurement of stock prices and the rate period that slightly lowers the rate of return in his Commonwealth Edison example from 1989 (the $D_1/P_0 + g$ formula results in a cost of equity of 7.973% while his adjustment reduces the cost of equity by .036%, to 7.937%.)

Q. Has Ms. McShane used quarterly compounding in other jurisdictions?

A. No. This is one area in which the Staff's position is more favorable to the company than Ameren's own testimony. Ms. McShane did not use quarterly discounting in her analysis and she did not use quarterly discounting in other testimony that I have reviewed. I realize that Staff has used the quarterly discounting technique for many years, but it is time to correct this upward bias in the DCF models.

Q. Should the Staff consider a two-stage DCF model where returns eventually move to the cost of capital?

A. Yes. In theory, an additional adjustment should be made to Staff's DCF cost of equity estimate that involves developing growth rates that incorporate movement of returns towards the cost of capital. While this adjustment may not be part of the base case estimate, it should be presented to illustrate how rational investors would price shares if they realize that returns could not be sustained above the cost of capital on an indefinite basis.

Q. How can movement of equity returns to the cost of capital be incorporated in the DCF model?

A. The DCF growth parameter typically assumes that ROE's are similar or above historic levels even though market to book ratios are substantially above 1.0. Rational investors recognize that this situation is not sustainable forever. To resolve this problem one can develop a multi-stage DCF model where growth rates are adjusted so that the market to book ratio eventually moves nearer to 1.0. Since market to book ratios are currently well above 1.0 and reductions in the market to book ratio come from lower equity returns, the projected earnings growth rate must be reduced. This reduction would reduce the cost of equity estimate.

To implement a two stage model I have assumed that investors expect earnings to grow at rates from the BxR formula for the next five years after which they expect growth rates to be consistent with the retention rate multiplied by a return on equity of 8%. One can then compute the cost of capital by calculating the internal rate of return on the outflow from investing in the stock relative to the inflows from dividends realized by the changing growth rates. Using the two stage DCF model where investors rationally expect that market value will eventually converge to book value, the cost of equity is reduced from 8.19% to 7.71% as shown on the table below:

	DCF from Single Stage Model	Stock Price from Staff Analysis	First Stage Growth	Dividend Payout Ratio	ROE for Second Stage Growth	Second Stage Growth	IRR for Two Stage Model	Cash Outflow	Dividend in Period 1	1 Dividend in Period 2 Using Growth of 6.3%	2 Dividend in Period 3 Using Growth of 6.3%	3 Dividend in Period 4 Using Growth of 6.3%	4 Dividend in Period 5 Using Growth of 6.3%	5 Dividend in Period 6 Using Growth of 3.6%	6
AGL Resources Inc.	10.39%	\$35.95	6.27%	55%	8%	3.60%	8.21%	(\$35.95)	1.48	1.57	1.67	1.78	1.89	2.01	
Energy East Corp.	7.74%	\$25.22	3.14%	66%	8%	2.76%	7.43%	(\$25.22)	1.16	1.20	1.23	1.27	1.31	1.35	
Idacorp Inc.	7.72%	\$32.71	4.05%	55%	8%	3.60%	7.34%	(\$32.71)	1.20	1.25	1.30	1.35	1.41	1.46	
NiSource Inc.	8.19%	\$20.74	3.76%	58%	8%	3.40%	7.90%	(\$20.74)	0.92	0.95	0.99	1.03	1.07	1.11	
Peoples Energy Corp.	8.10%	\$36.05	2.05%	84%	8%	1.32%	7.55%	(\$36.05)	2.18	2.22	2.27	2.32	2.36	2.41	
Pepco Holdings Inc.	8.04%	\$23.13	3.55%	61%	8%	3.13%	7.71%	(\$23.13)	1.04	1.08	1.12	1.15	1.20	1.24	
SCANA Corp.	9.95%	\$40.04	5.76%	56%	8%	3.55%	8.15%	(\$40.04)	1.68	1.78	1.88	1.99	2.10	2.22	
Southern Co.	10.04%	\$32.67	5.48%	65%	8%	2.77%	7.88%	(\$32.67)	1.49	1.57	1.66	1.75	1.84	1.95	
WGL Holdings Inc.	7.29%	\$30.06	2.80%	72%	8%	2.26%	6.85%	(\$30.06)	1.35	1.39	1.43	1.47	1.51	1.55	
Wisconsin Energy Corp.	9.74%	\$40.39	7.46%	35%	8%	5.20%	7.71%	(\$40.39)	0.92	0.99	1.06	1.14	1.23	1.32	
Xcel Energy Inc.	8.81%	\$18.30	4.11%	61%	8%	3.12%	8.02%	(\$18.30)	0.86	0.90	0.93	0.97	1.01	1.05	
Average	8.73%		4.40%				7.71%								
Median	8.19%		4.05%				7.71%								

775 **V. COST OF EQUITY CAPITAL ESTIMATION FROM THE CAPM**

776
777 **Q. What issues do you address in this section of your testimony?**

778 A. This part of my testimony addresses Staff's application of the CAPM, which
779 produced a higher cost of capital than its DCF model. Staff's CAPM estimate of
780 11.57% is virtually identical to the CAPM estimate made by Ameren of 11.60%.
781 The Staff CAPM model is derived by assuming that IP, CIPS and CILCO have
782 76% as much risk as a typical un-regulated company (the beta) and that investors
783 require an after tax return of 8.69% over and above the risk free rate to be induced
784 to invest in equities (the equity market risk premium).

785
786 In the testimony below, I discuss why Staff's method for computing the equity
787 market risk premium differs from approaches used by both practitioners and
788 academics and why Staff's 8.69% equity market risk premium is far too high. I
789 also describe why Staff's method for computing beta in the CAPM generates an
790 upward bias in the cost of equity. Correcting Ms. Freetly's CAPM estimate for
791 errors in the beta and the equity market risk premium produces a cost of equity
792 capital of 7.56%.

793
794 **Q. Why does Ms. Freetly's CAPM estimate result in a higher number than your**
795 **application of the model?**

796 A. My analysis of the CAPM resulted in an 8% cost of equity estimate – 3.6% below
797 Ms. Freetly's 11.6% estimate. The difference in our two numbers comes about
798 because I do not assume utility company betas revert to a mean of 1.0 and I use a
799 much lower equity market risk premium.

800
801 **Q. How does Ms. Freetly's equity market risk premium (EMRP) compare to**
802 **estimates by academics and practitioners?**

803 A. It is much higher. In my direct testimony I described how the EMRP is the most
804 studied number in finance. I showed that both current theoretical research and
805 practical valuation applications demonstrate the traditional Ibbotson historic

estimates significantly overstate the EMRP. Indeed, Staff's 8.69% EMRP is well above even the discredited Ibbotson number. The EMRP is the same number that has been studied as part of the social security debate; it is the same number used in every application of the CAPM; and the number is not expected to change much over time. An old article provided by Ms. McShane in response to a data request to support her position shows that academics have questioned high EMRP's for many years:

Empirical analysis indicates that the holding period return spreads from 1926 to the present overestimated the true market risk premium. Further analysis supports the notion that in recent years, the risk premium on stocks vis-à-vis bonds has declined. In 1980, in fact, it was negative.⁹

The Chan article on growth that I referred to earlier derived a 7.5% market return from the constant growth DCF model. This is a full 6.16% below the 13.66% number used by Staff.

It is not surprising that utility companies such as Ameren seem to disregard the EMRP research. However, with a staff of financial analysts dedicated to analyzing the cost of capital, Staff should take heed of the academic studies. Overestimation of the market premium is surely part of the explanation of why market to book ratios are so much higher than 1.0 for utility companies in Illinois. The paragraphs below discuss why it is imperative that the Staff use published research in revising its market premium methodology.

Q. Why does Staff derive an EMRP that is so much higher than the number used by other practitioners and academics?

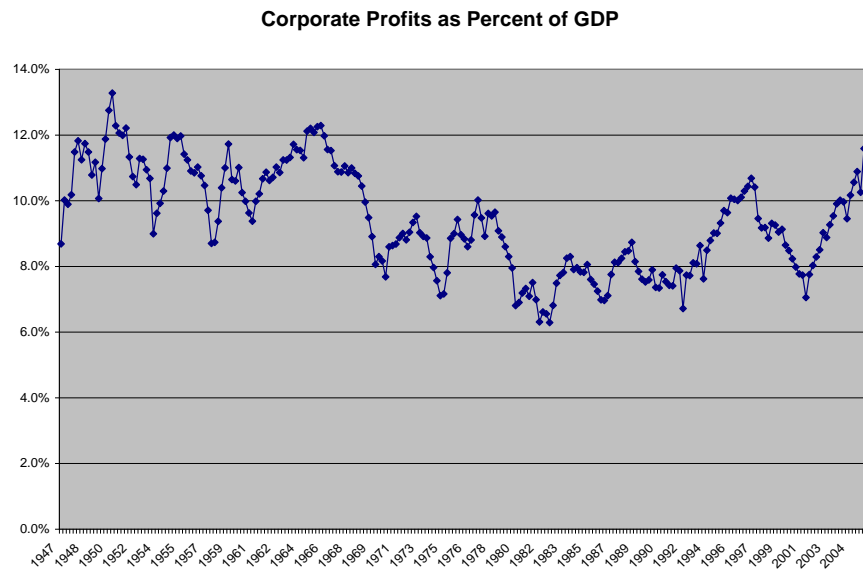
A. The most obvious error the Staff makes is the use of sell-side analyst growth rates in measuring the cost of equity for each company in the S&P 500. In my direct testimony I quoted an article by Grinold and Kroner who commented that use of

⁹ Copeland, Basil, Inflation, Interest Rates and the Equity Market Risk Premia, Financial Analysts Journal, 1982.

the Staff type approach is “preposterous” because “Wall Street analysts consistently forecast higher earnings than corporate America has been able to deliver.”¹⁰ Even in the bull markets of the 1980’s and 1990’s growth was nowhere near 13% as demonstrated in the following quote from a well known valuation text:

Between 1980 and 1999, earnings per share for the S&P 500 rose from \$15 to \$56...This nominal annual growth of 6.9% equals 3.2 percent in real terms, close to the long-term average growth in real profits for the economy.¹¹

To illustrate the problems with use of sell-side analyst growth rates I consider what would happen to aggregate corporate profits as a percentage of GDP in the whole economy if the Staff assumption came to fruition. Corporate profits have remained in the range of 7-12% of GDP since 1947 as shown on the graph below.

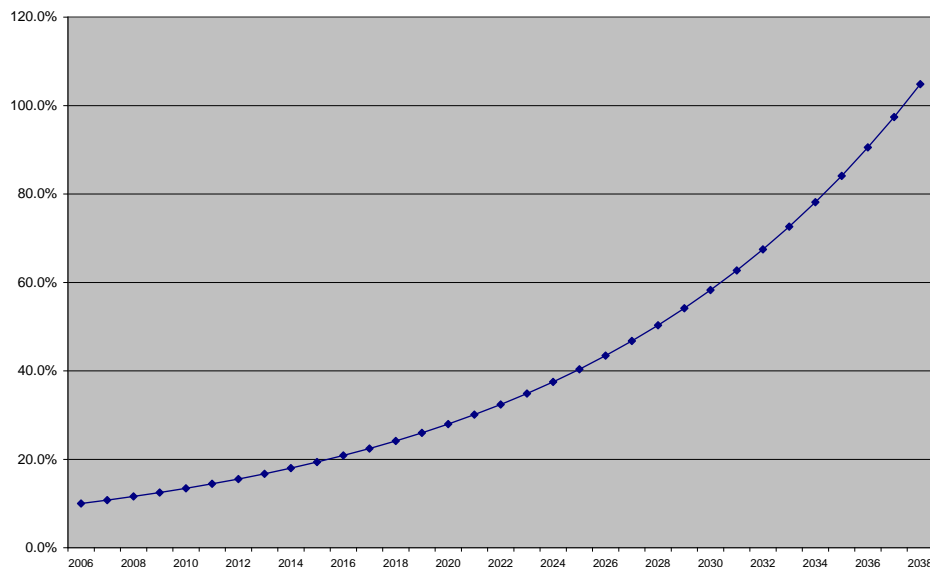


The error becomes obvious through assuming that both the GDP growth rate assumed by Ms. McShane of 5% and the 13% earnings growth rate assumed by

^{10 10} Grinold, Richard and Kroner, Kenneth, “The Equity Risk Premium: Analyzing the long-run prospects for the Stock Market” InvestmentInsights, 2002, page 152.

sell-side analysts come true. The graph below shows the percent of GDP constituted by corporate profits assuming profits are currently 10% of GDP. If GDP grows by 5% and earnings grow by 13%, corporate profits would constitute the entirety of GDP in 32 years (the year 2038.) This means that the Staff EMRP implicitly assumes that by 2038 there would be nothing else in the economy other than corporate profits.

Corporate Profits as Percent of GDP using 13% Growth and 5% GDP Growth



Q. Does the Staff's EMRP approach conflict with statements made by Staff in other contexts?

A. Yes. In the ComEd case the Staff acknowledged that sell-side analyst growth rates are upwardly biased for moderate and high growth companies but not for low growth companies. If the growth rates are biased for moderate and high growth companies, then the EMRP is also biased upwards.

¹¹ Koller, T., Goedhart, M., Wessells, D., 2005, Valuation Measuring and Managing the Value of Companies, Hoboken, New Jersey, John Wiley & Sons p. 9.

873 **Q. Discuss conceptual differences in beta measurement between your estimate**
874 **and the estimate developed by Ms. Freetly.**

875 A. Ms. Freetly averaged Value Line betas and betas from her own statistical analysis
876 to compute the CAPM cost of equity. These to betas were averaged in developing
877 the CAPM estimate. Staff calls the betas from its statistical analysis the
878 “Regression betas.” The Regression beta estimated by Ms. Freetly is .68 while
879 and the final beta recommended by Staff is .76.

880
881 Both the Value Line betas and the Regression betas include adjustments to move
882 beta numbers from the raw statistical regression towards a value of 1.0 (“the mean
883 reversion adjustment.”) Ms. Freetly explains that her adjustment to the regression
884 beta is made using the formula:

885
886
$$Badjusted = 0.33743 \times \text{Macro Beta of 1.0} + 0.66257 \times \beta_{raw}.$$

887
888 The Regression beta of .68 together with the above formula implies that the raw
889 beta estimated by Staff before the adjustment was .517.

890
891 The various alternative beta estimates that are a component of Staff’s average
892 have a large effect on the cost of capital as shown in the table below.

893
894

Cost of Equity with Alternative Beta Estimates				
	Rf	Beta	EMRP	Cost of Equity
Staff Presentation	4.97%	0.76	8.69%	11.57%
CAPM with Regression Beta	4.97%	0.68	8.69%	10.88%
CAPM with Regression Beta w/o Upward Adj	4.97%	0.52	8.69%	9.46%

895
896
897 The table demonstrates that issues associated with which beta to use from data
898 presented by Staff affect the cost of equity estimate by 2.11%. Even with the
899 highly inflated EMRP, use of the Regression beta without artificial upward
900 adjustments generates a cost of capital well below the Staff CAPM estimate

(9.46% versus 11.57%). The beta used by Staff -- which incorporates Value Line information and not other publicly available data and which assumes that utility company betas will revert to a mean of 1.0 -- inflates the cost of capital in an inappropriate manner.

Q. How do the Value Line betas compare to other publicly available sources?

A. Betas are published on the Yahoo and the Googlefinance websites as well as by Value Line. The table below compares betas from these alternative sources with the Value Line beta for companies in the Staff sample. This table demonstrates Value Line betas are almost double the betas provided by the other sources -- .9 for Value Line versus .49 and .46 from Google and Yahoo. Staff's choice of Value Line betas instead of other sources props up the cost of capital.

	Beta from Googlefinance Website	Beta from Yahoo Website	Value Line Beta
AGL Resources Inc. (ATG)	0.49	0.13	0.95
Energy East Corp. (EAS)	0.50	0.34	0.90
IdaCorp, Inc. (IDA)	0.80	0.49	1.00
Nisource Inc. (NI)	0.61	0.18	0.90
Peoples Energy Corp. (PGL)	0.37	0.66	0.90
Pepco Holdings Inc. (POM)	0.45	0.57	0.90
SCANA Corp. (SCG)	0.53	0.36	0.80
Southern Co. (SO)	(0.12)	0.23	0.65
WGL Holdings Inc. (WGL)	0.25	0.71	0.80
Wisconsin Energy Corp. (WEC)	0.14	0.46	0.80
Xcel Energy Inc. (XEL)	1.13	0.52	0.90
Median	0.49	0.46	0.90
Average	0.47	0.42	0.86

The data in this table demonstrates the Staff Regression beta of .52 is similar to median estimates from non Value Line sources. Averaging the Value Line beta together with Staffs Regression beta simply inflates the beta estimate.¹²

Q. How does Staff justify increasing the Regression beta that it computes from statistical analysis?

922 A. Staff uses studies that have been developed for the overall stock market to justify
923 propping-up its statistical estimate. Ms. Freetly testifies:

924 Some empirical tests of the CAPM suggest that the linear
925 relationship between risk, as measured by raw beta, and return is
926 flatter than the CAPM predicts. That is, securities with raw betas
927 less than one tend to realize higher returns than the CAPM
928 predicts. Conversely, securities with raw betas greater than one
929 tend to realize lower returns than the CAPM predicts. Adjusting
930 the raw beta estimate towards the market mean value of 1.0
931 results in a linear relationship between the beta estimate and
932 realized return that more closely conforms to the CAPM
933 prediction. Securities with betas less than one are adjusted
934 upwards thereby increasing the predicted required rate of return
935 towards observed realized rates of return. Conversely, securities
936 with betas greater than one are adjusted downwards thereby
937 decreasing the predicted required rate of return towards observed
938 realized rates of return. (Freetly testimony, lines 324-335)
939

940 The above statement implies that the mean reversion adjustment can move betas
941 in either an upward or downward direction. However since utility company betas
942 are almost always below 1.0, the real effect of Staff's adjustment is to increase the
943 estimated cost of capital.
944

945 **Q. Why are the upward adjustments to beta incorrect for utility companies?**

946 A. As I stated in my direct testimony, the original study that led to beta adjustments
947 was performed on a large sample of New York Stock Exchange common shares
948 rather than on utility stocks. When making adjustments across a large sample of
949 industries, most of which are not subject to price regulation, some adjustment to
950 beta may be appropriate for two reasons:

951 1. In un-regulated markets, companies tend to regress to average risk over
952 long periods of time as they grow. High-risk companies engage in
953 business strategies that are less risky and/or the risk of the industries
954 themselves moderates. Similarly, un-regulated companies with low risk
955 tend to take increased risk to improve returns. To illustrate this notion

¹² I used the Value Line betas in my direct testimony because I did not have access to other sources at the time I wrote the testimony.

consider the example of Microsoft Corporation. In the 1980's, the company was a small upstart that was considered risky and had a high beta. As the company has grown into one of the world's largest corporations, the income of the company is heavily influenced by overall economic activity and it now has a beta of close to 1.0.

2. When companies experience unusual events unrelated to overall market movement, the statistically measured beta can become very large or very small. Whether the beta becomes very large or very small depends on if the overall stock market happened to be increasing or decreasing when the unusual event occurred. I explained in my direct testimony how this statistical aberration caused the measured beta of NICOR to be unrealistically high. The effect of the unusual event on the statistically measured beta will diminish over time and the beta will revert to its fundamental level (not necessarily to 1.0). Since studies of the time series behavior of betas have generally been performed for a wide variety of stocks, the aggregate level of betas in research on large samples is assumed to revert to a mean of 1.0.

These two points do not apply at all to regulated utility companies. The first point is not legitimate as long as utility companies remain regulated. Regulation assures that risks will not increase over time and that business risks will not become the same as those of typical un-regulated firms. Indeed, IP, CILCO and CIPS are becoming less risky.

The second point is also not valid for regulated utility companies. If an unusual event causes the measured beta of a utility company to be high or low because of the manner in which regression analysis works, it does not make sense to assume the normal level that the beta will revert back to is 1.0. This is particularly true for regulated utility companies. Rudimentary time series analysis implies that one should not make forecasts where parameters move to an arbitrary mean which does not reflect the true underlying mean of the series. Utility betas have not had a mean anywhere near 1.0 for many

987 decades and there is no reason to expect that the utility company betas will move up to
988 1.0.

989 Staff ignores these points when it defends its beta methodology. Instead, the Staff
990 technique misinterprets the literature on the statistical properties of beta and
991 assumes that betas for regulated utilities have the same statistical properties as
992 betas for a cross section of typical un-regulated companies.

993
994 **Q. Have statistical studies demonstrated that regulated utility companies have**
995 **different statistical properties than typical un-regulated companies?**

996 A. Yes. A study I referred to in my direct testimony by Michael Gombola and
997 Douglas Kahl made such an analysis. While this study was performed many
998 years ago, fundamental statistical principles do not change and the differential risk
999 of regulated companies relative to non-regulated companies is still present. The
1000 study authors first note that typical formulas for non-regulated companies assume
1001 that betas revert to a mean of 1.0:¹³

1002
1003 ...the transient beta estimate obtained by OLS is presumed to
1004 return to an underlying mean of 1.0 slowly, since more weight is
1005 placed on the transient beta than on the underlying mean.
1006

1007 The following excerpts from the Gombola and Kahl article demonstrate that it is
1008 not appropriate to apply time series properties from beta estimates from non-
1009 regulated companies to utility company betas:

1010
1011 The results also suggest that the behavior of utility betas may
1012 differ from the behavior of large diversified samples of stocks.
1013 For example, since Blume finds an underlying mean beta of 1.0
1014 for a large sample of stocks, many Bayesian models will adjust
1015 the OLS beta estimate toward 1.0. *The results of this study,*
1016 *however, indicate that 1.0 is too high an underlying mean for*
1017 *most utilities. Instead, they should be adjusted toward a value*
1018 *that is less than one.*
1019

¹³ Gombola, Michael and Kahl, Douglass, Time-Series Processes of Utility Betas: Implications for Forecasting Systematic Risk, Financial Management/Autumn 1990

A reasonable estimate of the underlying mean may be obtained by OLS if applied to a very long time period.

Estimates of the prior adjustments in the Bayesian adjustment models could be applied *without relying blindly on large-sample estimates that may not be applicable to utilities*.

Q. Given the error in Staff's assumption that utility company betas revert to a mean of 1.0 rather than the overall utility industry mean, and given the discrepancy between Value Line and other Betas, what information should be used in the CAPM?

A. It would be best for Staff to compute a long-term mean for utility company betas and then apply the mean reversion adjustment using that long-term average. It would also be better to use sources other than Value Line if published betas are averaged together with the Regression beta. However, since the long-term mean has not been estimated, the raw beta Staff computes from its statistical analysis provides the best information for establishing the beta in this case. While it may be possible to develop a more efficient beta estimate by using a mean reversion adjustment to the true utility company mean, at least the raw beta is not biased. On the other hand, the Staff mean reversion adjustment that assumes regulated utility betas will revert to a mean of 1.0 clearly biases both the beta and the cost of capital upwards and is punitive to ratepayers.

Q. Using the corrected beta, a high end EMRP of 5% and Ms. Freetly's risk free rate, what is the corrected CAPM estimate?

A. The more reasonable beta estimate of .52 combined with Ms. Freetly's risk free rate of 4.97% and the 5% EMRP results in a cost of equity capital of 7.56%.

VI. RESPONSE TO MS. MCSHANE

Q. How does Ms. McShane respond to your cost of equity testimony?

1051 A. Ms. McShane generally avoids the substantive content of my direct testimony.
1052 She attempts to dismiss my testimony on the basis that my recommendation is
1053 below the returns granted by other regulatory commissions in other states for
1054 other utilities in the past few years. She also notes that my recommendation is
1055 below that of the Staff and other interveners in this case.

1056

1057 When making comparisons, Ms. McShane ignores IP, CILCO, and CIPS's unique
1058 situation including their very low operating risk. Ms. McShane also ignores the
1059 fact that utility companies are trading at significant premiums to book value and
1060 that investment bank analysis demonstrates that the cost of capital for delivery
1061 services companies should be far less than the returns typically granted by
1062 regulatory commissions.

1063 **Q. What is your response to Ms. McShane's criticism of your testimony?**

1064 A. Ms. McShane's reliance on other commissions rather than on an objective factual
1065 analysis would result in granted returns being above cost of capital for wires only
1066 companies. On the other hand, if the ICC uses factual evidence from market
1067 sources without bias from earlier decisions, it can be a leader in cost of capital
1068 analysis. A serious review of facts in this case confirms that the cost of capital for
1069 Ameren delivery services companies after unbundled rates become effective in
1070 2007 is nowhere near the 11%-12.5% suggested by Ms. McShane.

1071

1072 **Q. Why did you devote much of your direct testimony to discussion of market to**
1073 **book ratios that exceed 1.0 for utility companies and to presentations made**
1074 **by investment banks?**

1075 A. Although my recommended cost of equity is supported by academic research, by
1076 application of the CAPM and DCF methodologies, by investment banker analysis
1077 and even by Ms. McShane's own data, I do realize that my recommendation is
1078 lower than returns approved by other commissions. I also realize that the ICC is
1079 continually under pressure from utility company, equity investor and credit rating
1080 agency interests to perpetuate ROE's higher than the number I have
1081 recommended. Finally, I understand the techniques applied by Staff in estimating

cost of capital from the DCF and CAPM models differ from my suggested approach. In sum, there is considerable resistance to the theoretical and information advances incorporated in my analysis.

The difficulty of arguing against utility companies, their highly paid cost of capital consultants and Wall Street interests is precisely why I included an extended discussion of the DCF and CAPM models in my direct testimony and why I included cost of equity applied in a real transaction by JPMorgan, Lehman Brothers and Morgan Stanley. The number these investment banks constructed in their valuation analyses of the Exelon/PSEG merger is comparable to my recommendation. It is also why I quantified the reductions in Ameren's cost of capital due to reduced Ameren risk, lower tax rates on dividends, continued low interest rates and availability of increased academic research on equity market risk premiums.

Q. Comment on Ms. McShane's reliance on the returns allowed in other jurisdictions.

A. Cutting through all of the unnecessary jargon in her cost of capital discussion, Ms. McShane's real argument is that the Commission should grant Ameren a similar return to that which has been allowed by commissions in other States. This is a common tactic used by utility companies across the country. Ameren's attempt to bypass objective evidence with respect to the cost of capital is certainly understandable, given the difficulty in analytically supporting a return on equity of 11% for a very low risk company when 10-year Treasury bond rates are around 5% and after the tax rates on dividends have been cut. Utility companies realize that Commissioners often do not have the time and resources to fully analyze complex cost of capital issues and they exploit this to their benefit.

VII. RESPONSE TO MR. NICKLOY

1114 **Q. How does Mr. Nickloy generally respond to capital structure proposals**
1115 **which have an increased proportion of debt?**

1116 A. Mr. Nickloy uses a standard utility mantra that the sky will fall if the utility
1117 position is not adopted. He argues that IP, CIPS and CILCO must have target
1118 credit rating A+ or above or the companies will begin going down a slippery
1119 slope and their debt eventually will have junk status. For example, Mr. Nickloy
1120 states:

1121

1122 The *fallout* from this [a capital structure with increased debt]
1123 would be significant. Ratings almost certainly would decline,
1124 borrowing costs would increase, *reliable access* to capital
1125 would be diminished, the ability to reliably and cost-effectively
1126 fund utility infrastructure would be harmed, the risk of
1127 financial default would increase, and *investor confidence*
1128 *would be impaired*. These consequences would be
1129 incompatible with the utilities' commitment to reliably provide
1130 utility service over the long-term. (Nickloy rebuttal, lines 219-
1131 224)

1132

1133 The above statements could scare regulators, if they were really true. The table
1134 below lists utility companies that have an investment grade bond rating and also
1135 an equity ratio of 38% or lower. This information demonstrates that many
1136 companies with above investment grade rating have an equity ratio at or below
1137 my recommendation.

	S&P Bond Rating	Moody's Bond Rating	Equity Ratio
Equitable Resources	A-	A2	18%
Oneok Inc.	BBB	Baa2	28%
DPL, Inc.	BBB-	Baa1	38%
Duquesne Light	BBB+	Baa1	37%
Edison International	BBB+	A3	37%
TXU Corporation	BBB-	Baa2	6%
Centerpoint Energy	BBB	A2	12%
Dominion	A-	A2	34%
Northeast Utilities	BBB	Baa1	37%
Nstar	A	A1	34%
PNM Resources	BBB	Baa2	38%
PPL Corporation	A-	Baa1	38%
Public Service Enterprise Group	A-	A3	28%
TECO Energy Inc.	BBB-	Baa2	29%
Unisource Energy	BBB-	Baa3	32%

1138

1139

1140 **Q. Comment on Ameren witness Nickloy's assertion that capital structure**
1141 **guidelines should not be used because credit rating agencies rely on other**
1142 **factors in addition to the financial ratios?**

1143 A. Mr. Nickloy asserts that any analysis which derives capital structure ratios from
1144 S&P guidelines is not appropriate. For example, with regard to the cash flow
1145 coverage and the debt to cash flow he testifies:

1146

1147 Certainly these ratios are important; however it is also important
1148 that S&P is indicating that these measures are only a part of
1149 S&P's evaluation. So, clearly these measures do not constitute
1150 anything even close to the entirety of their analysis. (Nickloy
1151 rebuttal testimony, line 37-40)
1152

1153 Rating agencies do indeed perform much more analysis in developing a credit
1154 rating than simply computing financial ratios. The cash flow coverage and debt to
1155 cash flow ratios measure one component of classic credit analysis -- the amount
1156 of credit risk associated with the financing strategy of a company. This is only
1157 one of the "5 C's" in old fashion credit analysis. Other considerations include
1158 management (character), cash flow volatility (capacity to pay), collateral, and
1159 condition of the business. Given the prospective low business risk of IP, CIPS
1160 and CILCO after resolution of issues associated with the end of the transition
1161 period, use of the financial ratio guidelines will tend to understate the bond
1162 ratings, if anything. In other words, IP, CIPS and CILCO could have lower
1163 financial ratios than the BBB+ levels I used above and they still could maintain an
1164 investment grade rating.

1165

1166 To understand the process by which S&P and other rating agencies develop credit
1167 ratings, it is useful to consider the fact that ratings published by S&P, Moody's
1168 and Fitch are indications of the probability of default on a traded bond. (Credit
1169 ratings published by rating agencies are also used by commercial banks in setting
1170 the level of capital required to reserve against the possibility of a loss when loans
1171 are not repaid in full and on time.) From a mathematical standpoint, the
1172 probability of default of any loan ultimately depends on the volatility of operating

cash flows combined with the level of fixed obligations that must be serviced from those uncertain operating cash flows. Modern credit analysis uses option pricing theory developed by Nobel Laureate Bob Merton to directly measure default probability. This method is applied in practice by banks when they use the KMV model (sold by Moody's) to develop alternative credit ratings.

Because the business risks facing IP, CIPS and CILCO will be dramatically reduced after January 1, 2007, the volatility of operating cash flows for these companies will be very low compared to most other companies. The low cash flow volatility combined with leverage implied by BBB financial ratios will mean that the true default probability of the companies will be below that of other BBB companies that have financial ratios within the guidelines.

Q. Do you agree with Mr. Nickloy's statement that a hypothetical capital structure would punish Ameren for prudently managing its capital structure?

A. No. Mr. Nickloy suggests that a capital structure with an increased debt proportion would be punitive to the company and he asserts that increased equity is tantamount to motherhood and apple pie. For example he states:

If the Commission were to accept his premise that AmerenCIPS and AmerenCILCO are too highly rated, and accordingly, make adjustments to their allowed cost of capital based on this, the *Commission would effectively be punishing these two utilities* for their history of prudently financing and capitalizing their business and assets, and would be calling into question the utility managements' strategy of and commitment to maintaining strong investment grade utilities. (Nickloy rebuttal testimony, lines 145-151, emphasis added)

Using a capital structure derived from BBB guidelines in no way suggests that Ameren will be punished by not having the opportunity to earn its cost of capital. The reduction in rates that occurs with a lower equity ratio happens because the capitalization of the company is more efficient and not because the company's

shareholders are being punished. (Of course, if the Ameren were to be granted a high equity ratio and then later choose to increase leverage, its stockholders would experience a windfall.) To the extent that the capital structures of IP, CILCO and CIPS are inefficient, it is ratepayers who are being punished.

The suggestion that Ameren's management should be lauded for increasing its equity ratio with the commensurate effect of increasing rates is not valid. From a ratepayer perspective, an increased equity ratio strategy simply increases rates to the extent that the Commission adopts actual capital structure ratios. Following this logic, the company could retire all of its debt and argue that it is being extra prudent. However, ratepayers would lose the tax benefits associated with the deductibility of interest expense and other benefits associated with debt capital. Perhaps the company believes strategies that increase ratepayer rates are prudent for its shareholders, but as a regulated monopoly, the Commission must ultimately gauge whether such management actions are just and reasonable.

The primary question the commission must address in assessing the appropriate capital structure for IP, CILCO and CIPS is whether the benefits of maintaining a very high bond rating outweigh the benefits to ratepayers that accrue from a capital structure with somewhat less equity. Rather than making general statements about the prudence of achieving "strong investment grade" ratings, an objective analysis would compare the costs and benefits to ratepayers of alternative capital structure policy. In such an analysis, the cost of a lower credit rating that involves somewhat higher costs of newly issued debt would be compared to the reduced rates that occur from lowering the after tax cost of capital. In the bondsonline website referred to by Staff, the credit spread of an 10-year AA bond is .5% while the credit spread of an A bond is .75% and the credit spread of a BBB bond is 1.49% as shown on the table below.

Rating	1 yr	2 yr	3 yr	5 yr	7 yr	10 yr	30 yr
Aaa/AAA	5	10	15	22	27	30	55
Aa1/AA+	10	15	20	32	37	40	60
Aa2/AA	15	25	30	37	44	50	65
Aa3/AA-	20	30	35	45	53	55	70
A1/A+	30	40	45	58	62	65	79
A2/A	40	50	57	65	71	75	90
A3/A-	50	65	79	85	82	88	108
Baa1/BBB+	60	75	90	97	100	107	127
Baa2/BBB	65	80	88	95	126	149	175
Baa3/BBB-	75	90	105	112	116	121	146
Ba1/BB+	85	100	115	124	130	133	168
Ba2/BB	290	290	265	240	265	210	235
Ba3/BB-	320	395	420	370	320	290	300
B1/B+	500	525	600	425	425	375	450
B2/B	525	550	600	500	450	450	725
B3/B-	725	800	775	800	750	775	850
Caa/CCC	1500	1600	1550	1400	1300	1375	1500

It is true that having a lower bond rating would increase the cost of debt on newly issued debt. However, this cost is offset by the increased revenue requirements that result from increased equity in the capital structure. Using the example of CIPS, the company would have to issue about \$6 billion of debt at an increased spread of 1% for the AA bond rating to be advantageous relative to a BBB bond rating. This amount of new issue is more than 150% greater than CIPS's rate base.

Q. Is Mr. Nickloy correct that if Ameren were rated BBB, it would need a ratings cushion to protect itself from falling below investment grade?

A. No. Mr. Nickloy warns that since a BBB- rating is just above non-investment grade, that the commission should promote ratings, which exceed BBB. For example, he testifies:

At BBB, a utility is only two ratings notches away from having sub-investment grade, or junk, ratings - a ratings situation which plagued Illinois Power Company prior to its acquisition by Ameren and a ratings situation which plagued the prior parent companies of both AmerenCILCO and AmerenIP. Two notches is not a lot of "ratings cushion" to absorb factors or conditions which could apply negative pressure to the ratings. (Nickloy rebuttal, lines 158-163)

In gauging the probability of default on a loan, bond rating agencies and other financial institutions keep track of the number of defaults relative to the total amount of loans for different credit ratings. For example, the probability of

1264 default over a one year time frame published by Standard and Poor's was .07%
1265 for A bonds, .17% for BBB bonds and 1.08% for BB bonds. These statistics
1266 demonstrate that there is a much greater gap between the BBB to BB ratings than
1267 the gap between the A to the BBB ratings. To suggest that post 2007, IP, CILCO
1268 or CIPS debt would easily fall through the entire range of a BBB rating to junk
1269 status is simply not reasonable. Ameren's limited exposure to changes in energy
1270 price fluctuations means that falling to a below investment grade rating will not
1271 be caused by minimal changes in "factors and conditions" as Mr. Nickloy implies.
1272

1273 **Q. Discuss Mr. Nickloy's remarks involving the unique situation for IP.**

1274 A. Mr. Nickloy suggests that IP requires a high proportion of equity in its capital
1275 structure because of circumstances related to its purchase by Dynegy. These
1276 points relate to the fact that IP was below investment grade when it was part of
1277 Dynegy and that IP signed a purchase power contract with Dynegy. The Dynegy
1278 involvement with IP should not be used to justify increased rates for the following
1279 reasons:

1280
1281 - The fact that IP had a speculative grade bond rating when it was part of
1282 Dynegy does not mean that ratepayers should now be burdened with the
1283 cost of maintaining a debt ratio of below 50%. Imposing the high equity
1284 ratio on Illinois Power ratepayers using the rationale that problems
1285 associated with the Dynegy transaction are being repaired means that
1286 ratepayers will continue to be burdened with the cost of Illinois Power's
1287 choice to sell itself to Dynegy. IP is not part of Dynegy and therefore no
1288 special adjustments are required.

1289
1290 - Ameren's argument that IP's purchase power contract with Dynegy
1291 creates hidden leverage is irrelevant. First, the contract will not be
1292 outstanding over the tenure of rates (Mr. Nickloy acknowledges at line 99
1293 of his testimony that the contract is "a 2.25-year arrangement at the time
1294 of the closing of Ameren's acquisition of AmerenIP"). Second, benefits of
1295 the contract to the extent that it provides energy at below the auction rates

will not accrue to ratepayers. Third, the Dynegy contract is part of supply business that should not affect delivery service rates.

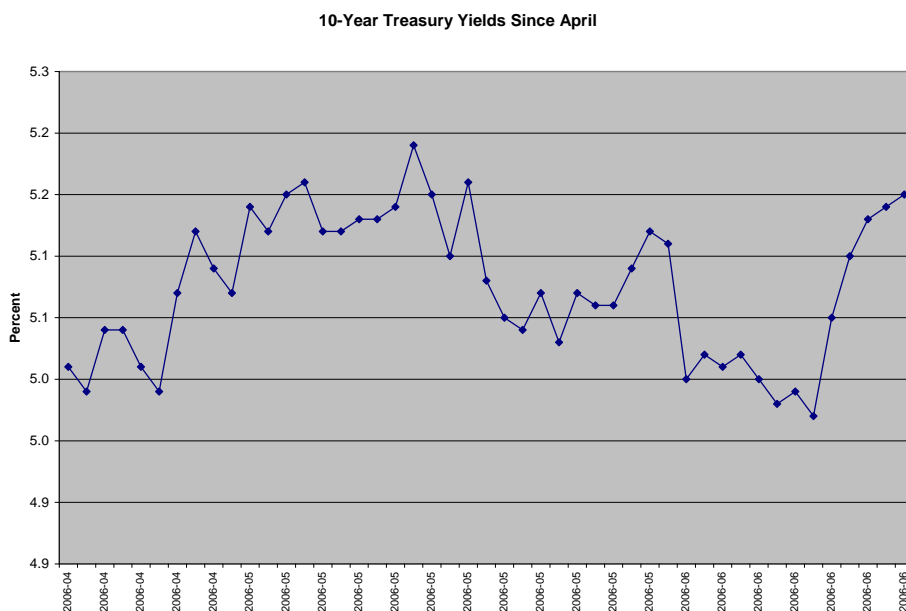
VIII. COST OF EQUITY UPDATE

Q. Discuss recent changes in the cost of equity capital.

A. In his testimony, Mr. Cupert describes how it may be inappropriate to base cost of capital analysis on a single date because of market movements. Therefore, I have evaluated the effects of recent volatile markets with increased inflation expectations have had on the cost of capital.

Q. What have been the recent trends in the 10-year treasury bond yield?

A. Recent trends in the 10-year treasury yield which I used as the basis for the risk free rate in my CAPM are shown on the graph below. The graph shows that despite all of the discussion about increased inflation expectations, the 10-year treasury bond yield is still around 5%.



1317 **Q. How have changes in market conditions affected your DCF cost of equity**
1318 **estimate?**

1319 A. To evaluate how recent trends in equity markets have affected Ameren's cost of
1320 equity, I have constructed a DCF analysis with current data. This analysis
1321 demonstrates that a single stage model with growth from the BxR formula results
1322 in a cost of equity of 8.00%. This analysis and the review of Treasury yields
1323 suggest that 8% is still a reasonable estimate of Ameren's cost of equity.

1324

1325 **Q. Does this conclude your rebuttal testimony?**

1326 A. Yes.